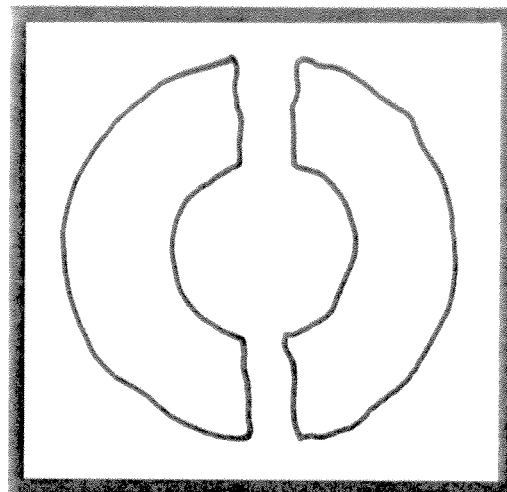


# Law of the Donut

## What Famous Rule of Donuts Is Illustrated by This Picture?

For the first exercise in each set, find the area of the rectangle. For all other exercises, multiply using the distributive property. Write the letter of the exercise in the box that contains the number of the answer.



**S**  $n + 5$   
 $n + 2$

**A**  $(n + 4)(n + 9)$

**E**  $(n - 3)(n + 10)$

**W**  $(n - 6)(n - 5)$

**O**  $(2n + 2)(3n + 8)$

**A**  $(7n + 5)(4n - 1)$

### Answers

- 16**  $n^2 + 7n + 36$   
**22**  $n^2 + 7n - 30$   
**7**  $28n^2 - 11n - 5$   
**10**  $n^2 + 7n + 10$   
**2**  $n^2 - 11n + 30$   
**13**  $28n^2 + 13n - 5$   
**6**  $n^2 + 13n + 36$   
**14**  $n^2 + 22n + 30$   
**20**  $6n^2 + 22n + 16$

**E**  $5x + 1$   
 $3x + 2$

**A**  $(9x - 2)(4x - 4)$

**L**  $(6x + 1)(3x - 2)$

**E**  $(5x - 4)(2x + 7)$

**O**  $(2x + 5y)(x + 6y)$

**H**  $(4x - y)(9x - 4y)$

### Answers

- 3**  $2x^2 + 17xy + 30y^2$   
**18**  $36x^2 - 20xy + 4y^2$   
**7**  $18x^2 - 9x - 2$   
**19**  $36x^2 - 25xy + 4y^2$   
**4**  $18x^2 + 27x - 2$   
**15**  $10x^2 + 27x - 28$   
**9**  $15x^2 + 13x + 2$   
**8**  $10x^2 - 44x - 28$   
**17**  $36x^2 - 44x + 8$

**M**  $t^2 + 4t - 3$   
 $t + 2$

**T**  $(2t - 3)(3t^2 + 2t + 5)$

**K**  $(4t + 1)(2t^2 - 7t + 2)$

**H**  $(3t - 4)(2t^2 - t - 5)$

**L**  $(8t - 3)(t^2 + 2t + 9)$

**V**  $(5t + 2)(4t^2 - 3t - 10)$

### Answers

- 11**  $8t^3 - 26t^2 + 60t - 27$   
**21**  $8t^3 + 13t^2 + 66t - 27$   
**1**  $6t^3 - 5t^2 + 4t - 15$   
**16**  $20t^3 + 13t^2 - 50t - 20$   
**12**  $t^3 + 6t^2 + 5t - 6$   
**8**  $20t^3 - 7t^2 - 56t - 20$   
**4**  $6t^3 - 5t^2 + 8t + 20$   
**14**  $8t^3 - 26t^2 + t + 2$   
**5**  $6t^3 - 11t^2 - 11t + 20$

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
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# A-7 Study Guide and Intervention

## Multiplying Polynomials

We use the "FOIL" Method:

**F**irst **O**uter, **I**nnner **L**ast

**Multiply Binomials** To multiply two binomials, you can apply the Distributive Property twice. A useful way to keep track of terms in the product is to use the FOIL method as illustrated in Example 2.

Box method

$$(x-2)(x+5)$$

*	x	-2
x	$x^2$	$-2x$
5	$5x$	$-10$

$$x^2 - 2x + 5x - 10$$

$$x^2 + 3x - 10$$

**Example 2** Find  $(x-2)(x+5)$  using the FOIL method.

$$(x-2)(x+5)$$

First Outer Inner Last

$$= (x)(x) + (x)(5) + (-2)(x) + (-2)(5)$$

$$= x^2 + 5x + (-2x) - 10$$

$$= x^2 + 3x - 10$$

The product is  $x^2 + 3x - 10$ .

Choose a method. Simplify your answer.

1.  $(x+2)(x+4)$

2.  $(y+5)(y+1)$

4.  $(x+5)(x-2)$

5.  $(m+3)(m-7)$

7.  $(w-2)(w-3)$

8.  $(x-10)(x-4)$

10.  $(4x-7)(x+3)$

11.  $(2a+5b)(a-4b)$

13.  $(3y+1)(3y+2)$

14.  $(6a+2)(2a+3)$

*	$3y$	$+1$
$3y$	$9y^2$	$3y$
$2$	$6y$	$2$

$$9y^2 + 3y + 6y + 2$$